

# Most Asked Questions

## 1. How does the system work?

In its simplest form, The DRYAIR system utilizes a water heater to heat a water/glycol heat transfer fluid. The heat transfer fluid is pumped to remote portable heat exchangers.

The portable heat exchangers' primary components include a hydronic coil and fan. The fan draws air over the hydronic coil, the air, which is heated by this process, is re-introduced to the work site. One water heater can supply multiple portable heat exchangers.

## 2. Do you require a boiler ticket to operate a DRYAIR system?

No; The DRYAIR system does not fall under pressure vessel regulations. It is an "open system" with an atmospherically vented expansion tank and a maximum operating pressure of 30 psi.

## 3. How difficult is the system to operate?

Very simple! There is a switch for the circulation pump, a switch to fire the water heater and a temperature setting to control the temperature of the heat transfer fluid. Once the system is running and initial start-up is complete, it is completely automatic. The water heater will automatically respond if heat requirements change!

## 4. How is the air temperature in individual areas controlled?

Thermostats are used on each individual heat exchanger. The thermostats act as on/off switches for the heat exchangers. By shutting off the fan, heat transfer from fluid to air is interrupted.

## 5. Does the DRYAIR system add moisture to the work site?

No; A DRYAIR system provides "desert air" conditions. Portable heat exchangers provide fluid-to-air heat transfer of clean, heated, low relative humidity air.

*Note: An increase in air temperature of 18°F (10°C) reduces relative humidity by 50 per cent. This allows the air to capture more moisture.*

A DRYAIR system actually promotes total structure dry-out. The system's exceptional dry-out capabilities make it a perfect fit for removing excess moisture caused by flooding or high humidity environments and provides the ideal drying conditions for interior finish work.

- Allows for daily application of joint compound or finish texture to drywall.
- Minimizes expansion and contraction of wallboard.
- Reduces amount of downtime between finished drywall and paint application.
- Eliminates shading of paint caused by residue from open flame heaters.
- Allows better adhesion of caulking materials.
- Provides a drier surface for application of water-based carpet and tile adhesives, epoxy and urethane coatings and epoxy joint fillers.
- Reduces the chance of shrinkage at mitered joints in finish trim materials.

On the other hand... direct flame burners add to the problems of relative humidity as they actually generate water.

*Water produced during the combustion of common fuels:*

- Natural gas .....9.3 lbs. /100,000 BTU
- Propane.....7.77 lbs. / 100,000 BTU
- Diesel.....5.5 lbs. / 100,000 BTU

*Example: A 1Million BTU natural gas burner will produce 2,232lbs.(223 gallons) of water in a 24 hour period.*

## 6. Is there a fire hazard?

No; here's why:

- Fuel combustion occurs only in the water heater, which is located outside of the work site.
- Heat transfer fluid temperature levels never exceed 190°F (88°C)... well within safe levels. In fact, explosion-proof fan motors could be utilized in the portable heat exchangers to make the DRYAIR system completely safe, even in highly explosive conditions.

## 7. What fuel source can be utilized

Propane, natural gas or diesel.

## 8. Can a system be converted from one gas type to another?

Yes. With a conversion kit, systems can be retrofitted from propane to natural gas and back. This conversion process will take approximately 2 to 4 hours to complete.

## 9. If I wish to use a natural gas DRYAIR system, what gas supply do I need?

You would have to contact your energy company to determine what the exact capacity of your supply line is. All "Utility" companies provide consultations free of charge.

## 10. How does the DRYAIR system affect concrete?

Two factors come into play when curing concrete;

- The hot, low relative humidity air produced by the DRYAIR system will actually remove moisture from the concrete. This will help accelerate the concrete curing process.
- A DRYAIR system does not reduce on-site oxygen levels. Reduced oxygen levels will cause oxidization of the concrete. Oxidization is seen in the form of "dusting". Once oxidization in the concrete has occurred, it cannot be corrected.

## 11. Will the DRYAIR system reduce my heating costs?

The DRYAIR system is more economical to operate than conventional portable heating systems. By eliminating the need for supplemental ventilation, a building can typically be heated with half the BTU capacity - resulting in substantial energy savings.

## 12. How will an indirect heating system affect my insurance costs?

With the threat of fire and explosions eliminated, insurance rates may also be reduced. Contact your insurance broker to confirm.

## 13. What are the supervision requirements?

The fuel-burning appliance is away from the work site and in its own enclosure - virtually no supervision is required. Temperature controls are automatic... a real plus for over-night and weekend work breaks.

## 14. Does the system require a lot of maintenance?

Very little; As the Central Heating Unit is operating with good, clean air, away from the work site, its operation is virtually maintenance free... like a home furnace! Heat Exchangers may require periodic cleaning if operating in dusty conditions.

## 15. How will the DRYAIR system affect conditions on the work site?

- As heat is provided with a liquid-to-air transfer, no noxious fumes are introduced.
- As you are not required to ventilate the work site, temperatures remain more constant.
- Portable heat exchangers are much quieter than burners.
- By not introducing added moisture to the work site, moisture or ice build-up does not occur. Conditions are more reminiscent of a summer job site.
- Because of a healthier work environment, increased worker productivity and decreases in employee absenteeism are highly probable.

## 16. What type of structures can be heated with the DRYAIR system?

DRYAIR's set-up versatility make it ideally suited to all heating applications, whether it be multi-storied, multiple space or large cubic footage.

## 17. How would I situate the system on the work site?

The set-up versatility of the system allows you a great deal of leeway in positioning the Central Heating Unit. Locating the system near your gas supply and circulating the heated fluid to remote locations on the work site is the normal procedure.

### 18. Is the DRYAIR system portable?

Yes; the Central heating Unit is very portable. It is mounted on skids, and can also be mounted on a utility trailer. This allows you to easily move the system on site.

### 19. Do we have to drain the system of fluid once our project is complete?

No; The Central Heating Unit, remote circulation manifolds and hoses are equipped with quick couplers and shut-off valves so that the system can be broken down without draining.

### 20. Is the heat transfer fluid utilized in the DRYAIR system environmentally friendly?

Yes; DRYAIR systems utilize a UCAR Foodfreeze propylene glycol / water combination as a heat transfer fluid. UCAR Foodfreeze fluid is a FCC grade (food grade) propylene glycol-based fluid.

### 21. Can the DRYAIR system utilize permanent or temporary in-floor heating lines?

Yes; Curing concrete & temporary heating, utilizing floor heat, can be accomplished by laying disposable plastic line in the concrete when pouring. It would also be possible to temporarily circulate through in-floor lines that would eventually be incorporated into a permanent heating system.

We recommend that you consult with project engineers or project architects prior to using the DRYAIR system in the above manner.

### 22. Can a DRYAIR system tie into air ducting already in place?

Yes; There are a number of advantages to this approach:

- Superior heat distribution throughout the site.
- No heating equipment under foot.
- It is the easiest method of providing and maintaining heat on a project with a large number of individual rooms.

### 23. Can a DRYAIR system be used for ground thaw and concrete cure applications?

Yes; All components required for ground thaw and concrete cure, including "Heat Transfer Line" and "Hose Reel", are available.

### 24. Why does the heat exchanger air temperature feel cooler than a direct flame burner?

The Dryair Heat exchanger has been designed to eliminate "Hot spots" in a building by using much higher airflow.

Example: a direct flame burner of equivalent size or rating will output 500 CFM of air at 400 °F while the Dryair fan coil will output 2500 CFM of air at 120 °F. This is an equal amount of BTU output, but the effect is different. The low air flow and high temperature of the direct flame burner will create a hot spot around itself and cause an uneven distribution of heat throughout the building. The Dryair fan is designed to move much more air at a lower temperature and creates a more even temperature throughout the building without the use of additional fans.

### 25. Why does Dryair Heat exchanger increase its BTU output when the air entering the Heat exchanger is cold and the air exiting the coil is also colder?

The Dryair system is based on the principle of heat transfer from the water to the air, thus the greater the difference between the air passing over the coil and the water temperature passing through the coil, the greater the transfer of heat.

### 26. The boiler is working fine yet the fluid temperature is not rising to the set point. Why does this happen?

The Dryair system is a heat transfer system, transferring heat from fluid to air. When the Heat exchangers pull more heat than the rating of the water heater, the fluid temperature will begin to fall as the heater cannot keep up to the demand.

In other words, variable conditions, such as cooler ambient air, will cause the system to reach its limit of output and it will not be capable of exceeding its BTU rating, therefore, fluid temperatures may fall below the set point.

### 27. Is heat loss from fluid lines a concern?

Heat loss from the fluid lines can be significant if there are very long outside fluid lines and they are not insulated. Indoors however, the heat loss from the fluid lines simply contributes to the heating of the building.

## Why should you choose a DRYAIR system for your temporary heat requirements.

Today, more Project Managers are looking for temporary construction heating systems that meet the following list of criteria;

- It should provide a zero risk of fire or explosion.
- It should not have a negative impact on the working conditions and environment.
- It should not have a negative impact on the quality of the end product.
- It must be reliable.
- It must be hassle-free.
- It must be economical.
- It must be versatile.

*A DRYAIR system will meet all of the above criteria!*

